Summary of Cancer Incidence and Mortality for Cherokee County, SC

Cancer Incidence in Cherokee County

The first step in the analysis of cancer data for this county was to look at the number of new cancer cases diagnosed in the county and compare this to the number of cancer cases expected in this county (see Table 1). This first step determines if there is anything unusual with cancer patterns in the area. The number of "expected" cancer cases is calculated by using South Carolina cancer rates and applying them to the population of each county.

Table 1 shows what types of cancer were diagnosed in Cherokee County from 1996-2000, and how many cancer cases were expected. Overall, there was a significantly higher number of cancer cases in Cherokee County than expected. The most common types of cancer in this county were lung, female breast, prostate, and colon/rectum cancers. These types of cancer are also the most common cancers occurring across all of South Carolina.

The analysis revealed one specific type of cancer **(Lung/Bronchus)** where the number of cases was significantly higher than expected. Smoking is the most important risk factor for lung cancer. More than 80% of lung cancers are thought to result from smoking.

Cancer Deaths in Cherokee County

To assess cancer deaths in Cherokee County, cancer mortality data from 1998-2002 were used. The process used to analyze new cancer cases was also used to analyze cancer deaths. Table 2 shows the number of cancer deaths that occurred in Cherokee County and the number expected. Overall, the number of cancer deaths that occurred was statistically higher than expected in Cherokee County; however this is not surprising because the observed number of cancer cases was also significantly higher than expected.

The analysis revealed two specific types of cancer **(Lung/Bronchus and Leukemia)** where the number of deaths was significantly higher than expected.

We would expect a higher number of lung cancer deaths because the number of new lung cancer cases was significantly higher. Survival from lung cancer is generally poor, therefore, the results of a higher number of deaths is not surprising.

The analysis for Cherokee County also demonstrated that the number of leukemia deaths was significantly higher than expected. There are four main types of leukemia, and each has a totally different set of risk factors associated with it. Upon further investigation, the number of deaths occurring year to year was similar from 1998-2002. The leukemia deaths were also from different types of leukemia, therefore demonstrating a cancer cluster is not likely.

Conclusions

To summarize, overall there was a significantly higher number of cancer cases and cancer deaths occurring in Cherokee County than expected. A significantly higher number of lung/bronchus cancer cases and cancer deaths occurred in Cherokee County compared to the expected. The most important risk factor for lung cancer is smoking. More than 80% of lung cancers are thought to result from smoking. The number of leukemia deaths was also significantly higher than expected. Because the number of leukemia deaths was consistent through the 5- year time period, a cluster is not likely.

In order for a true cancer cluster to exist, the number of cancers occurring must be more than would be expected by chance. Along with statistical testing, there are several other criteria that determine whether a true cancer cluster exists. First, a cancer cluster would more likely involve rarer types of cancer rather than more common cancers like lung or prostate cancers. Also, a cancer cluster would occur with one specific type of cancer rather than having excesses in several different types of cancer.

Taking all these criteria into consideration, the South Carolina Central Cancer Registry determined there is no evidence of cancer clustering in Cherokee County.

For questions about this report, please contact Susan Bolick-Aldrich, MSPH, Director of the South Carolina Central Cancer Registry.

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Information on cancer incidence provided by the SC Central Cancer Registry, Office of Public Health Statistics and Information Services, SC Dept. of Health and Environmental Control.

Information on cancer mortality provided by the Division of Vital Records and the Division of Biostatistics, SC Dept. of Health and Environmental Control. *05/25/04*

Table 1. Analysis of New Cancer Cases in Cherokee County, 1996-2000

Site	Observed	Expected	Observed/Expected	Chi-SquareTest*
Lung/Bronchus	**225**	**183.95**	**1.22**	**9.16**
Breast (Female)	197	173.83	1.13	3.09
Prostate	186	186.60	1.00	0.00
Colon/Rectum	146	134.40	1.09	1.00
Non-Hodgkin Lymphoma	42	38.11	1.10	0.40
Bladder	39	45.96	0.85	1.05
Kidney/Renal Pelvis	36	29.48	1.22	1.44
Melanoma	32	39.91	0.80	1.57
Uterus	27	28.59	0.94	0.09
Oral/Pharynx	25	33.47	0.75	2.14
Leukemia	25	22.69	1.10	0.23
Pancreas	24	26.19	0.92	0.18
Ovary	21	19.37	1.08	0.14
Cervix	19	16.08	1.18	0.53
Brain/CNS	19	15.96	1.19	0.58
Stomach	16	18.45	0.87	0.33
Esophagus	16	16.01	1.00	0.00
Larynx	15	14.43	1.04	0.02
Multiple Myeloma	13	13.09	0.99	0.00
Liver	11	8.19	1.34	0.97
Thyroid	10	12.30	0.81	0.43
Soft Tissue	6	6.40	0.94	0.03
Other Female	5	6.12	0.82	0.20
Hodgkin Disease	5	5.36	0.93	0.02
Unknown/Ill-Defined	41	NA	NA	NA
All Sites	**1235**	**1165.09**	**1.06**	**4.19**

Excludes in situ cases of cancer to allow for comparison.

Cancer sites with less than 5 cases of cancer expected are not analyzed due to the unreliability of statistical tests based on small numbers. These sites have been removed from this table.

*The Chi-Square statistical test allows us to determine if the difference between what is observed and what is expected is significant. If the value is greater than 3.84, then we are 95% confident that the observed number of cases is significantly different from the expected number of cases.

Prepared by: SC Central Cancer Registry, Office of Public Health Statistics and Information Services, Department of Health and Environmental Control, 2600 Bull St., Columbia, SC 29201
March 15, 2004 mgj

Table 2. Analysis of Cancer Deaths in Cherokee County, 1998-2002

CancerSite	Observed	Expected	Observed/Expected	Chi-SquareTest*
Lung/Bronchus	**201**	**160.11**	**1.26**	**10.44**
Colon/Rectum	65	54.01	1.20	2.24
Female Breast	43	40.67	1.06	0.13
Pancreas	31	30.07	1.03	0.03
Unknown/Ill-Defined	30	33.20	0.90	0.31
Leukemia	**30**	**19.23**	**1.56**	**6.03**
Prostate	26	34.78	0.75	2.22
Non-Hodgkins Disease	22	19.75	1.11	0.26
Esophagus	15	13.39	1.12	0.19
Oral/Pharynx	15	10.41	1.44	2.02
Liver	15	10.40	1.44	2.04
Bladder	15	10.29	1.46	2.15
Kidney/Renal Pelvis	13	11.17	1.16	0.30
Brain/CNS	12	13.85	0.87	0.25
Ovary	11	12.70	0.87	0.23
Multiple Myeloma	9	12.60	0.71	1.03
Melanoma Of Skin	9	6.21	1.45	1.26
Stomach	5	13.82	0.36	5.63
Uterus	5	6.44	0.78	0.32
Cervix	4	5.53	0.72	0.42
All Sites	**595**	**546.15**	**1.09**	**4.37**

Excludes in situ cases of cancer to allow for comparison.

Cancer sites with less than 5 cancer deaths expected are not analyzed due to the unreliability of statistical tests based on small numbers. These sites have been removed from this table.

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May 20, 2004 mgj